

**INITIAL STATEMENT OF REASONS
FOR
PROPOSED BUILDING STANDARDS
OF THE
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
REGARDING THE ADOPTION BY REFERENCE OF THE
2005 EDITION OF THE NATIONAL ELECTRICAL CODE (NEC)
WITH AMENDMENTS INTO THE 2007 CALIFORNIA ELECTRICAL CODE (CEC)
CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 3**

The Administrative Procedure Act requires that an Initial Statement of Reasons to be available to the public upon request when rulemaking action is being undertaken. The following are the reasons for proposing this particular rulemaking action:

STATEMENT OF SPECIFIC PURPOSE AND RATIONALE:

(Government Code Section 11346.2 requires a statement of specific purpose of **EACH** adoption, amendment or repeal and the rationale of the determination by the agency that EACH adoption, amendment or repeal is reasonably necessary to carry out the purpose for which it is proposed.

- When repealing adopted California original standards, summarize the effect of the standards and explain why the standard is no longer necessary
- When amending a standard, explain the standard proposed to be modified, explain the effect of the proposed modification, explain the inadequacy of the standards being modified, and explain why the proposed amendment is necessary)

1) The Public Problem, Administrative Requirement, or Other Circumstance Addressed.

Administrative Requirement: Health and Safety Code Section 17922 directs the Department of Housing and Community Development (HCD) to recommend adoption of the most recent edition of the NEC into Part 3, of Title 24, CCR.

2) Specific Purpose

The California Building Standards Commission (CBSC) selected the 2005 NEC published by the National Fire Protection Association as the model code to be referenced in Title 24, Part 3, CCR for the 2007 code adoption cycle.

The specific purpose of these regulations is to adopt by reference the 2005 edition of the NEC, with State amendments, as indicated on the attached Adoption Matrix, into Part 3, Title 24, CCR for the following programs:

- a) **State Housing Law:** relative to residential occupancies, buildings or structures accessory thereto.
- b) **Employee Housing Act:** relative to the use of electrical equipment and systems in or on any building or structure or outdoors on premises or property in accordance with Health and Safety Code Section 17040.
- c) **Mobilehome Parks and Special Occupancy Parks:** relative to the use of electrical equipment and systems in or on any permanent buildings within the park in accordance with Health and Safety Code Sections 18300, 18670, 18865 and 18873.3.
- d) **Factory-Built Housing Law:** relative to residential buildings, dwellings or portions thereof, or building component, or manufactured assembly in accordance with Health and Safety Code Section 19990.

3) Rationale for Necessity

The National Fire Protection Association published and made available in November, 2004, the 2005 edition of the NEC. The NEC will automatically become adopted, in its entirety, pursuant to Health and Safety Code Section 17922 (b), in November, 2005 (one year from its date of publication), if not adopted or proposed for adoption by HCD to the CBSC prior to that date.

If the 2005 NEC becomes adopted in its entirety without being adopted by the CBSC, such automatic adoption would cause considerable confusion because California amendments, also known as “State amendments,” are necessary modifications to the model code language to ensure that the 2007 CEC is consistent with state law and unique California conditions.

It is necessary to propose the adoption of some sections of the 2005 NEC with amendments to the model code language to incorporate state law provisions and to accommodate unique California conditions.

It is necessary to not propose the adoption of some sections of the 2005 NEC as they would conflict with existing state law and to accommodate unique California conditions.

It is necessary to propose to bring forward previously existing California amendments. Some existing amendments will be brought over without any changes and will represent no change in their effect from the 2004 California Electrical Code. Other previously existing California amendments will be amended as follows:

- Add or change the reference to the application authority [HCD1, HCD 1/AC, and/or HCD 2].
- Amend language for consistency with existing state and federal law.
- Amendment language indicating that specified model code language of the 2005 edition of the NEC is not adopted into the 2007 CEC.

Specific Proposed Regulatory Actions:

Article 89 – Administration

Repeal Article 89 – Administration sections 89.1 through 89.11 and adopt Article 89 – General Code Provisions sections 89.101.1 through 89.101.12 and sections 89.108.1 through 89.108.10.2.

Article 89 is an existing California amendment in the 2004 CEC. HCD is proposing to repeal the existing language contained in Article 89 in its entirety, re-number and replace it with coordinated language developed by HCD, the Office of the State Fire Marshall, Division of the State Architect, Office of Statewide Health Planning and the California Building Standards Commission. Similar chapters are proposed by HCD to be included in the California Building Code, the California Plumbing Code, and the California Mechanical Code.

HCD is proposing the adoption of a newly developed Article with sections specific to the needs of California and each state agency. This new chapter will promote uniform enforcement throughout the state and ensure local enforcement agencies are provided accurate statutory information regarding the enforcement of building standards in the State of California.

Language that previously existed in Article 89 has been repealed, reformatted, or relocated and is shown appropriately throughout this rulemaking package and the article has been renamed.

Article 90 – Introduction. This article provides direction to the user regarding code arrangement, the rules used within, and the intent of the NEC.

HCD is proposing the adoption of Article 90 without amendment. Article 90 provides the introduction to the NEC and explains the purpose of the NEC as “the practical safeguarding of persons and property from hazards arising from the use of electricity.”

CHAPTER 1: General, Articles 100-110

Article 100 Definitions

Article 110 Requirements for Electrical Installations

HCD is proposing the adoption of Articles 100 and 110 of Chapter 1 without amendments. Article 100 contains those definitions essential to the proper application of this Code. Article 110 covers general requirements for the examination and approval, installation and use, access to and spaces about electrical conductors and equipment, and tunnel installations.

CHAPTER 2: Wiring and Protection, Articles 200-285

Article 200 Use and Identification of Grounded Conductors

Article 210 Branch Circuits
Article 215 Feeders
Article 220 Branch-circuit, Feeder and Service Calculations
Article 225 Outside Branch Circuits and Feeders
Article 230 Services
Article 240 Overcurrent Protection
Article 250 Grounding
Article 280 Surge Arresters
Article 285 Transient Voltage Surge Suppressors: TVSSs

HCD is proposing the adoption of Articles 200, 210, 215, 220, 225, 230, 240, 250, 280, and 285 of Chapter 2 without amendments. This chapter covers the topics listed above. Adoption of these articles will provide the user with code provisions for application in the construction of residential occupancies, accessory structures and permanent buildings and structures regulated by HCD.

CHAPTER 3: Wiring Methods and Materials, Articles 300-398

Article 300 Wiring Methods.
Article 310 Conductors for General Wiring.
Article 312 Cabinets, Cutout Boxes, and Meter Socket Enclosures.
Article 314 Outlet, Device, Pull and Junction Boxes; Conduit Bodies; Fittings; and Handhole Enclosures.
Article 320 Armored Cable: Type MC.
Article 322 Flat Cable Assemblies: Type FC.
Article 324 Flat Conductor Cable: Type FCC
Article 326 Integrated Gas Spacer Cable: Type IGS
Article 328 Medium Voltage Cable: Type MV
Article 330 Metal-Clad Cable: Type MC
Article 332 Mineral-insulated, Metal-Sheathed Cable: Type MI.
Article 334 Nonmetallic-Sheathed Cable: Types NM, NMC, and NMS. (W/Amendment)
Section 334.10 Note: [HCD 1 and HCD 2]
Article 336 Power and Control Tray Cable: Type TC
Article 338 Service-Entrance Cable: Types SE and USE
Article 340 Underground Feeder and Branch-Circuit Cable: Type UF
Article 342 Intermediate Metal Conduit: Type IMC
Article 344 Rigid Metal Conduit: Type RMC
Article 348 Flexible Metal Conduit: Type FMC
Article 350 Liquidtight Flexible Metal Conduit: Type LFMC
Article 352 Rigid Nonmetallic Conduit: Type RNC
Article 353 High Density Polyethylene Conduit: Type HDPE Conduit
Article 354 Nonmetallic Underground Conduit with Conductors: Type NUCC
Article 356 Liquidtight Flexible Nonmetallic Conduit: Type LFNC
Article 358 Electrical Metallic Tubing: Type EMT
Article 360 Flexible Metallic Tubing: Type FMT
Article 362 Electrical Nonmetallic Tubing: Type ENT
Article 366 Auxiliary Gutters
Article 368 Busways
Article 370 Cablebus
Article 372 Cellular Concrete Floor Raceways
Article 374 Cellular Metal Floor Raceways
Article 376 Metal Wireways
Article 378 Nonmetallic Wireways
Article 380 Multioutlet Assembly
Article 382 Nonmetallic Extensions
Article 384 Strut-Type Channel Raceway
Article 386 Surface Metal Raceways
Article 388 Surface Nonmetallic Raceways
Article 390 Underfloor Raceways
Article 392 Cable Trays
Article 394 Concealed Knob-and-Tube Wiring (W/Amendment)
Section 394.12 Exception: [HCD 1] (exceptions 1 through 6)
Article 396 Messenger Supported Wiring

Article 398 Open Wiring on Insulators

HCD is proposing the adoption of Articles 300, 310, 312, 314, 320, 322, 324, 326, 328, 330, 332, 336, 338, 340, 342, 344, 348, 350, 352, 354, 356, 358, 360, 362, 366, 368, 370, 372, 374, 376, 378, 380, 382, 384, 386, 388, 390, 392, 396, and 398 of Chapter 3 without amendments. Adoption of these articles will provide the user with code provisions for application in the construction of residential occupancies, accessory structures and permanent buildings and structures regulated by HCD.

HCD is proposing to continue the adoption of Article 334 with amendment. HCD believes that the FPN (Fine Print Note) of Section 334.10, which is not enforceable, does not provide the user with adequate direction; therefore, HCD is proposing to continue the adoption of the "Note" for clarity and specificity. This note will provide the user with a specific reference code, The California Building Code, for Type III, IV, and V construction as used in Section 334.10, items (2), (3), and (4). Item 4 was added within the model code language and included within the scope of our amendment.

HCD is proposing to continue the adoption of Article 394 as amended for HCD 1. The amendment provides specificity for the code user as it relates to the use of knob and tube wiring in California.

CHAPTER 4: Equipment for General Use, Articles 400-490.

Article 400 Flexible Cords and Cables

Article 402 Fixture Wires

Article 404 Switches

Article 406 Receptacles, Cord Connectors, and Attachment Plugs (Caps)

Article 408 Switchboards and Panelboards

Article 409 Industrial Control Panels

Article 410 Luminaries (Lighting Fixtures), Lampholders, and Lamps

Article 411 Lighting Systems Operating at 30 Volts or Less

Article 422 Appliances

Article 424 Fixed Electric Space-Heating Equipment

Article 426 Fixed Outdoor Electric Deicing and Snow-Melting Equipment

Article 427 Fixed Electric Heating Equipment for Pipelines and Vessels

Article 430 Motors, Motor Circuits and Controllers

Article 440 Air-Conditioning and Refrigerating Equipment

Article 445 Generators

Article 450 Transformers and Transformer Vaults (Including Secondary Ties)

Article 455 Phase Converters

Article 460 Capacitors

Article 470 Resistors and Reactors

Article 480 Storage Batteries

Article 490 Equipment, Over 600 Volts, Nominal

HCD is proposing the adoption of Articles 400, 402, 404, 406, 408, 410, 411, 422, 424, 426, 427, 430, 440, 445, 450, 455, 460, 470, 480, and 490 of Chapter 4 without amendments. Adoption of these articles will provide the user with code provisions for application in the construction of residential occupancies, accessory structures and permanent buildings and structures regulated by HCD.

CHAPTER 5: Special Occupancies, Articles 500-590.

Article 500 Hazardous (Classified) Locations, Classes I, II, and III, Divisions 1 and 2.

Article 501 Class I Locations

Article 502 Class II Locations

Article 503 Class III Locations

Article 504 Intrinsically Safe Systems

Article 505 Class I, Zone 0, 1, and 2 Locations

Article 506 Zone 20, 21, and 22 Locations for Combustible Dusts, Fibers, and Flyings

Article 510 Hazardous (Classified) Locations - Specific

Article 511 Commercial Garages, Repair and Storage

Article 513 Aircraft Hangers

Article 514 Motor Fuel Dispensing Facilities

Article 515 Bulk Storage Plants

Article 516 Spray Application, Dipping, and Coating Processes
Article 517 Health Care Facilities
Article 518 Assembly Occupancies
Article 520 Theaters, Audience Areas of Motion Picture and Television Studios, Performance Areas, and Similar Locations
Article 525 Carnivals, Circuses, Fairs, and Similar Events
Article 530 Motion Picture and Television Studios and Similar Locations
Article 540 Motion Picture Projection Rooms
Article 545 Manufactured Buildings
Article 547 Agricultural Buildings
Article 550 Mobile Homes, Manufactured Homes, and Mobile Home Parks
Article 551 Recreational Vehicles and Recreational Vehicle Parks
Article 552 Park Trailers
Article 553 Floating Buildings
Article 555 Marinas and Boatyards
Article 590 Temporary Installations

HCD is proposing the adoption of Articles 518, 545, and 590 of Chapter 5 without amendments. Adoption of these articles will provide the user with code provisions for application in the construction of residential occupancies, accessory structures and permanent buildings and structures regulated by HCD.

HCD is proposing to **not** adopt Articles 500, 501, 502, 503, 504, 505, 506, 510, 511, 513, 514, 515, 516, 517, 520, 525, 530, 540, 547, 550, 551, 552, 553, and 555 of the 2005 NEC. The regulations covered by these articles do not fall within the occupancies regulated by HCD.

CHAPTER 6: Special Equipment, Articles 600-695.

Article 600 Electric Signs and Outline Lighting
Article 604 Manufactured Wiring Systems
Article 605 Office Furnishings (Consisting of Lightning Accessories and Wired Partitions)
Article 610 Cranes and Hoists
Article 620 Elevators, Dumbwaiters, Escalators, Moving Walks, Wheelchair Lifts, and Stairway Chair Lifts
Article 625 Electric Vehicle Charging System (W/SFM Amendment)
Article 630 Electric Welders
Article 640 Audio Signal Processing, Amplification, and Reproduction Equipment
Article 645 Information Technology Equipment
Article 647 Sensitive Electronic Equipment
Article 650 Pipe Organs
Article 660 X-Ray Equipment
Article 665 Induction and Dielectric Heating Equipment
Article 668 Electrolytic Cells
Article 669 Electroplating
Article 670 Industrial Machinery
Article 675 Electrically Driven or Controlled Irrigation Machines
Article 680 Swimming Pools, Fountains, and Similar Installations
Article 682 Natural and Artificially Made Bodies of Water
Article 685 Integrated Electrical Systems
Article 690 Solar Photovoltaic Systems
Article 692 Fuel Cell Systems
Article 695 Fire Pumps

HCD is proposing the adoption of Articles 600, 620, 680, 682, 690, and 692 of Chapter 6 without amendments. Adoption of these articles will provide the user with code provisions for application in the construction of residential occupancies, accessory structures and permanent buildings and structures regulated by HCD.

HCD is proposing to **not** adopt Articles 604, 605, 610, 630, 640, 645, 647, 650, 660, 665, 668, 669, 670, 675, 685, and 695 of the 2005 NEC. The code provisions covered by these articles do not fall within the occupancies regulated by HCD.

HCD is proposing the adoption of Article 625 with Office of the State Fire Marshal amendments.

CHAPTER 7: Special Conditions, Articles 700-780.

Article 700 Emergency Systems

Article 701 Legally Required Standby Systems

Article 702 Optional Standby Systems

Article 705 Interconnected Electric Power Production Sources

Article 720 Circuits and Equipment Operating at Less Than 50 Volts

Article 725 Class 1, Class 2, and Class 3 Remote-Control, Signaling, and Power-Limited Circuits.

Article 727 Instrumentation Tray cable: Type ITC.

Article 760 Fire Alarm Systems

Article 770 Optical Fiber Cables and Raceways

Article 780 Closed-Loop and Programmed Power Distribution

HCD is proposing the adoption of Articles 700, 702, 705, 720, 725, 727, and 770 of Chapter 7 without amendments. Adoption of these articles will provide the user with code provisions for application in the construction of residential occupancies, accessory structures and permanent buildings and structures regulated by HCD.

HCD is proposing to **not** adopt Articles 701, 760, and 780 of the 2005 NEC. The code provisions covered by these articles do not fall within the occupancies regulated by HCD.

CHAPTER 8: Communications Systems, Articles 800-830.

Article 800 Communication Circuits

Article 810 Radio and Television Equipment

Article 820 Community Antenna Television and Radio Distribution Systems

Article 830 Network-Powered Broadband Communications Systems

HCD is proposing the adoption of Articles 800, 810, 820, and 830 of Chapter 8 without amendments. Adoption of these articles will provide the user with code provisions for application in the construction of residential occupancies, accessory structures and permanent buildings and structures regulated by HCD. In addition, members of the California Building Standards Commission requested HCD propose for adoption Chapter 8 of the 2005 NEC during the code adoption cycle. HCD has conducted a fact-finding analysis, concurs with this request, and is proposing the adoption of Chapter 8.

CHAPTER 9: Tables

Table 1 Percent of Cross Section of Conduit and Tubing for Connectors

Table 2 Radius of Conduit and Tubing Bends

Table 4 Dimensions and Percent Area of Conduit and Tubing (Areas of Conduit or Tubing for the Combinations of Wires Permitted in Table 1, Chapter 9)

Table 5 Dimensions of Insulated Conductors and Fixture Wires

Table 5A Compact Aluminum Building Wire Nominal Dimensions and Areas

Table 8 Conductor Properties

Table 9 Alternating-Current Resistance and Reactance for 600-Volt Cables, 3-Phase, 60 HZ, 75°C (167°F)-Three Single Conductors in Conduit

Table 11(A) Class 2 and Class 3 Alternating-Current Power Source Limitations

Table 11(B) Class 2 and Class 3 Direct-Current Power Source Limitations

Table 12(A) PLFA Alternating-Current Power Source Limitations

Table 12(B) PLFA Direct-Current Power Source Limitations

HCD is proposing the adoption of the Tables in Chapter 9 without amendments. The Tables in Chapter 9 provide a useful tool for the user and the information found in the tables are applicable as referenced to the articles within this code.

ANNEXES

ANNEX A: Product Safety Standards.

ANNEX B: Application Information for Ampacity Calculation.

ANNEX C: Conduit and Tubing Fill Tables for Conductors and Fixture Wires of the Same Size.

ANNEX D: Examples.

ANNEX E: Types of Construction.

ANNEX F: Cross-Reference Tables
ANNEX G: Administration and Enforcement

HCD is proposing to not adopt Annexes A, B, C, D, E, F, and G of the 2005 NEC. The language within the annexes is non-mandatory and is not part of the requirements or recommendations of the 2005 NEC;

it has been included for informational purposes only. The Annexes are available for use by local enforcement agencies without HCD adoption.

TECHNICAL, THEORETICAL, AND EMPIRICAL STUDY, REPORT, OR SIMILAR DOCUMENTS

(Government Code Section 11346.2(b)(2) requires an identification of each technical, theoretical, and empirical study, report, or similar document, if any, upon which the agency relies in proposing the regulation(s).)

None.

CONSIDERATION OF REASONABLE ALTERNATIVES

(Government Code Section 11346.2(b)(3)(A) requires a description of reasonable alternatives to the regulation and the agency's reason for rejecting those alternatives. In the case of a regulation that would mandate the use of specific technologies or equipment or prescribe specific action or procedures, the imposition of performance standards shall be considered an alternative.)

None. There were no alternatives available to HCD. HCD is required by statute to adopt this model code by reference.

REASONABLE ALTERNATIVES THE AGENCY HAS IDENTIFIED THAT WOULD LESSEN ANY ADVERSE IMPACT ON SMALL BUSINESS

(Government Code Section 11346.2(b)(3)(B) requires a description of any reasonable alternatives that have been identified or that have otherwise been identified and brought to the attention of the agency that would lessen any adverse impact on small business. Include facts, evidence, documents, testimony, or other evidence upon which the agency relies to support an initial determination that the action will not have a significant adverse impact on business.)

None. There were no alternatives available to HCD. HCD is required by statute to adopt this model code by reference.

FACTS, EVIDENCE, DOCUMENTS, TESTIMONY, OR OTHER EVIDENCE OF NO SIGNIFICANT ADVERSE ECONOMIC IMPACT ON BUSINESS

(Government Code Section 11346.2(b)(4) requires the facts, evidence, documents, testimony, or other evidence on which the agency relies to support an initial determination that the action will not have a significant adverse economic impact on business.)

HCD has determined that this regulatory action would have no significant adverse economic impact on California business enterprises and individuals, including the ability of California businesses to compete with businesses in other states. (See *Economic Impact of the Proposed Electrical Code Regulations on Private Persons and Businesses in the State of California* in this rulemaking file.)

DUPLICATION OR CONFLICTS WITH FEDERAL REGULATIONS

(Government Code Section 11346.2(b)(5) requires a department, board, or commission within the Environmental Protection Agency, the Resources Agency, or the Office of the State Fire Marshal to describe its efforts, in connection with a proposed rulemaking action, to avoid unnecessary duplication or conflicts with federal regulations contained in the Code of Federal Regulations addressing the same issues. These agencies may adopt regulations different from these federal regulations upon a finding of one or more of the following justifications: (A) The differing state regulations are authorized by law and/or (B) The cost of differing state regulations is justified by the benefit to human health, public safety, public welfare, or the environment. It is not the intent of this paragraph to require the agency to artificially construct alternatives or to justify why it has not identified alternatives.)

These regulations do not duplicate nor conflict with federal regulations.